

Abstract

In one embodiment of the invention, a marine article of the invention includes a phosphorescent phosphor. A particularly advantageous phosphorescent phosphor comprises MAl_2O_4 . As used herein, “M” is at least one cation selected from a group consisting of calcium, strontium, and barium. The phosphor comprises 0.001% to 10% of a europium activator, and 0.001% to 10% of at least one dopant selected from the group consisting of lanthanum, cerium, praseodymium, neodymium, samarium, gadolinium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, tin and bismuth as a co-activator, in terms of mol % relative to the metal element expressed by M. The phosphorescent marine article has an afterglow corresponding to a luminance of at least 0.3 mCd/m² for at least 420 minutes.